ANL/ES-41

A METHODOLOGY TO MEASURE THE PERFORMANCE OF THE EPA REGIONAL EIS REVIEW PROCESS

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ENERGY AND ENVIRONMENTAL SYSTEMS DIVISION

ANL/ES-41
General, Miscellaneous,
and Progress Reports
(UC-2)

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December 1974

*Study performed under Contract No. IAG-D4-H543 between the U. S. Atomic Energy Commission and the Environmental Protection Agency, Office of Federal Activities.

; this most excellent canopy, the air, this brave o'erhanging firmament, this majestical roof fretted with golden fire... it appears no other thing than a foul and pestilant congregation of vapours.

Shaks. Hamlet
Act II., Sc ii

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ABSTRACT

This study presents a methodology that will enable the Office of Federal Activities to assess the environmental impact statement (EIS) review process as performed at the regional level. Interviews with regional and OFA personnel as well as a perusal of the open literature form the basis of the methodology discussed.

1.0 INTRODUCTION

The distribution of regional resources for environmental impact statement (EIS) review varies significantly from region to region. As there is no apparent explanation as to why such a distribution occurs, the Deputy Administrator of EPA asked the Office of Federal Activities (OFA) to account for the structuring behind this wide distribution, performing in its analysis the following tasks:

1. Evaluate the factors that may cause such differentials;
2. Develop recommended criteria that may be used by headquarters and regional managers in assessing resource requirements; and
3. Develop measures of accomplishment for the EIS review activity.

Due to a lack of resources, the OFA inhouse study[17]* set up to perform these tasks was unable to fulfill its mission. Consequently, the Office of Federal Activities sought assistance from the Argonne National Laboratory to develop an appropriate and functional methodology.

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*Superscript numbers refer to references found in the reference portion of this report.

Purpose

The purpose of this study is to develop a methodology that can be used by the Office of Federal Activities to measure the performance of the regional EIS review process. By "performance" is meant proper and timely execution of actions that follow established EPA policies and guidelines; and by "EIS review process" is meant either the effort expended in the actual review of EISs or the effort expended in related activities such as pre-EIS liaison, etc.

Organization of the Report

The report is organized into two basic sections: Sections 2 and 3. Section 2 discusses the data collection effort that was undertaken during the study and describes the existing EIS review process -- data was obtained from regional offices, the OFA, the EIS reporting system, and the open literature; and Section 3 presents the performance measurement methodology. Section 1 establishes the raison d'etre and Section 4, containing its conclusions and recommendations, ends the report.

2.0 DATA COLLECTION

This section enumerates and describes the data sources available and the information obtained from them. Essentially, it describes the EIS review activity as it now exists, and the data collection effort focused on those elements that comprise it. The data sources investigated were:

- Five EPA regional offices
- The Office of Federal Activities staff
- The EIS reporting system
- Available relevant literature

The five EPA regional offices, which were selected jointly by the Office of Federal Activities and Argonne National Laboratory, included Atlanta, Chicago, Denver, San Francisco and Seattle. (The Philadelphia office was also chosen as a data source but conflicting schedules made it impossible to establish a mutually agreeable visitation date.) Each region was interviewed to identify its procedure for reviewing environmental impact statements, to establish its strong and weak points, and to determine the structure of its interaction with the Office of Federal Activities.

Staff members who were available within the OFA were also interviewed. They were asked to describe how they interacted with the regional EIS reviewers and requested to make suggestions as to how they thought the EIS review process might be improved. In addition, the environmental impact statement reporting system being developed by the OFA was inspected to determine its effectiveness.

Sections 2.1 through 2.4 present the findings of the data collection effort, which included a search of the literature to determine what previous studies were pertinent to this project. These findings are used to develop the performance assessment methodology of Section 3 as well as the staffing algorithm described in Appendix B.

2.1 REGIONAL VISITS

The purpose of each of the regional visits was to have each EIS reviewer within the region describe his or her EIS review procedure. Those interviewed included the EIS coordinator, members of his staff, his immediate

supervisor and other regional staff members involved in the EIS review process.* Each EIS coordinator was questioned about his interaction with the Office of Federal Activities, the National Environmental Research Centers and other EPA program elements in order to determine to what extent technical and policy guidance was requested and/or received. Each individual interviewed within the region was asked what policy or EIS review guidance he/she had received either through the EIS coordinator or directly from other EPA offices. Almost without exception, each person was also asked how he/she would measure the performance of the region's EIS review process.

Before describing some of the data gathered from the regional visits, it should be pointed out that three distinct types of EIS review staffs seem to exist among the five regions visited and probably among all ten regions.** An EIS review staff may be: heavily technical, semi-technical, and non-technical.

A heavily technical review staff is one that consists of technical people reviewing the majority of impact statements received. Although EISs are sent to other branches for special expertise, the EIS review coordinator is not highly dependent on people not under his direct control.

A semi-technical review staff consists of technically-oriented generalists who review routine impact statements. The EIS coordinator depends more heavily on the expertise of people not under his direct control.

A non-technical review staff is composed of non-technically-oriented people whose responsibility it is to coordinate comments from people not under the direct control of the EIS coordinator. With this type of review staff, the EIS coordinator is very dependent on people not under his direct control.

Below is a presentation of the EIS review procedure used, related activities undertaken, and interoffice communication performed by each of the regions visited during the project.

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* A list of those staff members involved with EIS review in the regions visited is shown in Appendix A.

**A more detailed description of the three types of review staff is given in Appendix B.

2.1.1 Region IV: Atlanta

EIS Review Procedure (EIS Coordinator - F. Redmond)

In Region IV the EIS review staff is located within the EIS Review Section, EIS Review Preparation Branch, Surveillance and Analysis Division. The review staff consists of a review coordinator, a technical writer, and an administrative assistant (see Appendix A). The EIS Branch is divided into two sections, the review section and the preparation section, but the two functions are kept separate.

The Region IV EIS review is a non-technically oriented staff, which ordinarily serves as a coordinating unit. The actual EIS review takes place elsewhere within the region by individuals who are technically oriented and who are regarded by the EIS coordinator as "experts" in specific fields. Hence, the primary purpose of the EIS review staff is to ensure that the proper experts review the EIS and that each expert's comments are integrated into the resulting comment letter.

After the comments have been collected and integrated into a comment letter, the EIS coordinator rates the draft EIS according to the EPA rating scheme.[18] If the draft EIS is given a rating of LO (lack of objections), the comment letter is signed by the EIS branch chief. If the draft EIS receives a rating of ER (environmental reservations), the deputy regional administrator signs the comment letter; while a statement, which is controversial or rated ER-3 or EU (environmentally unsatisfactory), must be sent through the Office of Federal Activities. Ordinarily, the comment letters will be sent to the submitting federal agency without concurrence by the EIS reviewers within the region.

When a final EIS is received by the region, it is reviewed by the EIS coordinator. Any final that had been rated ER at its draft stage is not only reviewed by the EIS coordinator, but also requires that a letter be written in response to the final EIS. If this final EIS meets environmental expectations, the branch chief signs the letter of response; but if the final statement does not meet environmental expectations, the letter of response is signed by the deputy regional administrator.

EIS Related Activities

The region is involved in pre-EIS liaison to the extent that there has been a formalized procedure instituted to provide other agencies with information. When requests for information previous to the issuance of a draft EIS are made, the appropriate expert regional reviewer is queried by the EIS coordinator who then relays the information to the requesting agency. Additionally, the region reviews pre-EIS reports such as 10-year, power-plant site surveys for the State of Florida. Sometimes regional EIS personnel are assigned to special tasks as in FY 74 when they were assigned to the Energy Office for 120 days.

Interoffice Communications

Views expressed by the EIS coordinator are that though interaction with OFA is minimal, enough is present to keep the region informed; that though the OFA EIS computerized reporting system is excellent no feedback is desired from the system since the region has its own accounting system; and that more policy guidance would be desirable.

The region interacts with the Corvallis NERC for thermal reviews and interacts with the EPA program office when necessary.

2.1.2 Region V: Chicago

EIS Review Procedure (EIS Coordinator - G. Williams)

The Environmental Impact Section is located within the Federal Activities Branch of the Surveillance and Analysis Division, and its EIS review team consists of an EIS coordinator and four reviewers. Region V's EIS review staff is a heavily technical review staff as the staff itself is able to review a majority of the impact statements received while earmarking certain sections of each EIS for review by in-region technical experts.

Each review staff member is responsible for the review and coordination of certain types of EISs (e.g., highways, power plants, etc.). After reviewing the EIS, the staff member is responsible for obtaining any expert review that might be needed from within the region or from other EPA program offices. When all the technical experts have completed the review of a particular EIS, comments are sent to the EIS review staff member in charge. Upon receipt of

comments from each of the technical experts queried, the EIS staff member integrates the comments of the experts, along with other comments he deems appropriate, into a comment letter. The comment letter is submitted to each of the technical experts for review, and after necessary and appropriate revisions have been made, the EIS staff member and the EIS coordinator assign the rating to the EIS and finalize the comment letter. The comment letter is signed by varying staff officers in accordance with the rating assigned to the EIS: if LO, by the branch chief; if ER, by the division chief; and if EU, by the regional administrator.

The EIS coordinator reviews the final environmental impact statements, and while reviewing he also prepares checklists for use by his staff.

EIS Related Activities

The EIS coordinator is the focal point for pre-EIS liaison between the region and submitting government agencies. About 63% of EIS staff time is devoted to actual EIS review, while the other 37% is distributed between technical assistance (9%), program coordination (22%), and conferences and training (6%).

Interoffice Communications

The region interacts frequently with the EPA program offices, especially the noise abatement and radiation offices. The Corvallis NERC is sometimes asked to comment on specific water problems occurring in a particular water problem area, as is Research Triangle Park for specific air problems. However, the NERC response is either not timely or the region is referred to the literature for the solution to their questions. Contact with OFA is maintained as needed.

2.1.3 Region VIII: Denver

EIS Review Procedure (EIS Coordinator - W. Geise)

In Region VIII, the EIS coordinator is the chief of the Environmental Evaluation Branch, which is located within the Air and Water Programs Division. Besides the EIS coordinator, the Branch consists of seven EIS reviewers and two secretaries.

The EIS review staff considers themselves to be generalists in that each reviewer eventually reviews each type of EIS. Although no reviewer is responsible for the review of a particular type of EIS, each reviewer is assigned a particular EIS area in which he is expected to become well versed. Hence, a designated reviewer is responsible for keeping track of pertinent documents and significant policy decisions that exist for a particular EIS area. The Region VIII EIS review staff may be considered semi-technical, for though they do review all EISs, they also depend rather heavily on the expert opinion of individuals not under the control of the EIS coordinator. The responsibilities of the Environmental Evaluation Branch are divided evenly between EIS reviewing and writing and the Branch members alternate from reviewers to writers to reviewers again.

When a draft EIS is received, the EIS coordinator assigns it to one of his reviewers who initiates its review by skimming through it to identify potential problem areas. Then, those technical people, located outside of the Environmental Evaluation Branch, who are knowledgeable about the potential problem areas are also asked to review the EIS simultaneously. The review and initial set of comments made by the EIS reviewer and the comments generated by each technical expert are collected for integration into a draft comment letter, which is then discussed with each technical expert. When the EIS reviewer completes coordination with the technical experts, a revised comment letter is sent through the EIS coordinator and through the branch heads of each technical expert used in the review process to the regional administrator who signs the comment letter.

Presently there is no mechanism within the region for a systematic review or follow-up on final EISs. Although the EIS coordinator recognizes that this is a weakness in the region's total review effort, there is no plan to develop a final EIS review procedure for the region. Hence, as much as 60-70% of the time of EIS reviewers is spent on draft EISs.

EIS Related Activities

The EIS review staff spends about 30% of its time in pre-EIS activities. These activities include reviewing pre-EIS documents (environmental reports, environmental assessments, etc.) and visiting statement-submitting agencies when the review staff visits the cities in which these agencies are located.

Interoffice Communications

There is some interaction between the region and the EPA Field Investigation Center located in Denver. Relationships exist and interactions have taken place between the region and OFA, and between the region and the EPA headquarter program elements. Also, the Kerr NERC has assisted the region with salinity problems.

2.1.4 Region IX: San Francisco

EIS Review Procedure (EIS Coordinator: J. Wise)

The focus for the EIS review activity is located in the Interagency Activities Section within the Planning Branch of the Air and Water Programs Division. Besides the EIS coordinator who is the chief of the Interagency Activities Section, there are two EIS reviewers and a secretary who is located in a typing pool.

The two EIS reviewers are involved heavily in the actual EIS review function so that the review staff could be described as a heavily technical review staff. They attempt to review every draft EIS, referring certain EISs to the regional technical experts as needed. The EIS review procedure is similar to that described for Region V, except that the sign-off procedure for the comment letter is somewhat more complex. Here in Region IX, each comment letter is signed by the regional administrator. However, before he signs the comment letter, it must be approved and initialed by the EIS coordinator, the chief of the Planning Branch, and the director of the Air and Water Programs Division.

Additionally, the EIS review staff is responsible for reviewing the final EISs.

EIS Related Activities

The EIS review staff is also involved in pre-EIS work, and they point out that there is an increasing number of pre-EIS documents to review, each of which takes about two man-days.

Interoffice Communications

The region has formal interactions with OFA, although the EIS coordinator feels that not much guidance is needed from OFA as the problems encountered are regional in nature. Interaction takes place between the region and the EPA program elements.*

2.1.5 Region X: Seattle

EIS Review Procedure (EIS Coordinator - W. Jaspers)

The EIS coordinator is the chief of the EIS Branch, which is located within the Management Division of Region X. The EIS Branch consists of the EIS coordinator, three reviewers, and a secretary. The EIS staff can be classified somewhere between a non-technical review staff and a semi-technical review staff; that is, although they review EISs, they spend considerable time coordinating with the region's technical experts.

When a draft EIS is received, the EIS coordinator scans it and assigns it to a reviewer who will handle the coordination. After reviewing it, the EIS reviewer directs the EIS toward the appropriate regional technical experts. Upon collection of comments from the technical experts, the EIS reviewer and the technical writer (a member of the review staff) draft a comment letter, which is submitted to the EIS coordinator as well as the technical experts who were associated with the review for additional comments. The letter is then revised, if necessary, and sent to the division director for his signature. (It should be noted that about one-third of the statements reviewed are state EISs.**) A final EIS is reviewed only if the draft EIS was rated ER or worse.

EIS Related Activities

Each review staff member spends a significant portion of time (up to 50%) participating in pre-EIS public relations, federal agency EIS education programs, and pre-EIS liaison. The region feels that one of its goals is rather to make environmentalists out of other agencies than to stop projects.

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* However, this interaction, because of its formality, sometimes does create difficulties especially in the area of noise impacts since EPA has not set up noise standards.

**There are about 80 state EISs reviewed/year.

The region has published guidelines[9] to be used when reviewing environmental impact statements, but none of the technical experts interviewed in the region actively employ these guidelines or other environmental checklists.

Interoffice Communications

Interactions with other EPA offices occur when absolutely necessary.

2.1.6 Conclusions Drawn from Regional Visits

Sections 2.1.1 through 2.1.5 discussed each region's EIS review procedures, EIS related activities, and interoffice communications. This section presents conclusions drawn by the authors, resulting from the regional visits and from the regional interviews conducted. Unless otherwise noted, these conclusions are to be considered as general and to reflect conditions present in the five regions interviewed.

1. A lack of communications exist between OFA and the regions. Although there are formal channels established for communications between the regions and OFA, the content of information exchanged between the two units seems low. In this regard, it is apparent that OFA's follow-up procedure should be improved to assure that policy guidelines are being implemented by the regions. For example, in the five-region survey, it was found that some of the technical reviewers did not know about the OFA's highway guidelines[1] and most of the reviewers did not have copies.

2. A communication gap exists within the regions. Some of the technical reviewers who review highway EISs were not asked to review these guidelines when they were in draft form even though OFA had requested the regions to perform the review. None of the EIS coordinators seemed to be aware of the technical reviewers' dissatisfaction with the highway guidelines, and, if they did, they did not make this dissatisfaction known to OFA.

3. As each region was visited, it became clear that the very organizational location of the EIS review function within its region can contribute to the failure or success of the review function. For example, in one region enforcement division members were told that they may review EISs "only on their own time," while in another region there seems to be a minimum of interdivisional friction and a spirit of cooperation. Almost without exception, each EIS coordinator interviewed felt that if he reported directly to the Regional Administrator or Deputy Regional Administrator, any interdivisional friction would be eliminated.

4. As the regional technical experts were interviewed, it became apparent that the more technically oriented the EIS review staff, the more conscientious the technical experts became in their reviews. The technical experts interviewed in regions where the "non-technical review staffs concept" is employed appeared rather unconcerned with the whole EIS process and remarks such as "if I have time I review it and if I don't - I don't" were common. Moreover, many times the technical experts send back an EIS to the coordinator with either no comment or a general purpose comment that offends no one when, in truth, the EIS has not been reviewed. This attitude may result because the technical experts are asked to comment on every EIS that is remotely connected with the expert's area of concentration. In regions having technically-oriented staffs, this problem does not appear as prevalent because the technical experts usually are consulted about specific problems occurring in certain EISs.

5. Each region visited praised the OFA EIS reporting system now being implemented. All agree that such a tracking mechanism is necessary and the planned implementation procedure is satisfactory. Most regions interviewed see the OFA EIS reporting system as an aid to OFA to enable them to keep track of all EISs in the country. Most regions have their own accounting system, which they feel fulfills their needs.

6. Each EIS coordinator has his own particular set of instructions on how to review EISs for new review staff members or for technical experts. Most everybody interviewed felt that an EIS review was a highly subjective process such that checklists could not be used effectively. Consequently most EIS coordinators rely on EPA manual 1640-1 and on-the-job training to instruct new reviewers.

7. All the regions visited had little or no interaction with the EPA National Environmental Research Centers (NERCs). Many individuals within the regions do not understand the relationship of the NERCs to the EIS review process.

8. Sample comment letters were obtained from each region. After perusing these letters, we conclude that any scheme for measuring the performance of a region's EIS review activity that is based on comment-letter grading or evaluation, alone, would be futile. Comment letters say little or nothing about pre-EIS liaison, may not truly represent the completeness of a draft EIS, nor indicate whether the review of the EIS was complete or incomplete. For example, a region that has had extensive pre-EIS liaison with a submitting agency may have very little to say in a comment letter, yet the region's total EIS review activity may have been excellent.

2.2 OFFICE OF FEDERAL ACTIVITIES STAFF

Available staff members of the OFA were interviewed to determine their interaction with the EPA regions. Especially stressed was any interaction involving policy guidance or EIS review coordination. This section presents some of the conclusions drawn from the interviews.

1. Many of the OFA staff members do not know the EIS review mechanism within each region. For example, the OFA staff members' knowledge of regional reviewers becomes fuzzy beyond the regional EIS coordinator. Those OFA members interested in transportation EISs do not know who their counterparts

are within each region. One OFA member commented that a list of regional EIS reviewers would be extremely useful. Such a list appears in Appendix A of this report for the five regions visited.

2. OFA's follow-up procedure with regard to policy guidance needs improvement. OFA is in the process of developing guidelines for EIS review in several areas (e.g., airports, power plants, etc.) If the highway guidelines are taken as an example, it becomes clear that OFA needs an improved follow-up procedure to ensure that the technical reviewers at the regional level are commenting on the draft guidelines and are using the published guidelines. Issuing guidelines is half the battle, the other half is monitoring their implementation.

2.3 THE EIS REPORTING SYSTEM

The EIS Reporting System[2] is the OFA's method of keeping an up-to-date record of the number, the whereabouts, and the status of EISs being reviewed. The EIS Reporting System was discussed with each of the EIS coordinators as well as staff members of the OFA. All of the regions visited thought that the reporting system was a good and necessary mechanism for keeping track of the EIS review process. In most regions visited, the EIS coordinator's secretary is tasked with satisfying the requirements of the reporting system, and this procedure seems to be working well. Although all the regions comply with the information requirements of the System, most regions have their own EIS accounting system.

The Argonne team had occasion to request information from the System's data base and found the information to be unreliable.* However, since the reporting system has not yet reached its final phase in which information will be fed directly into the computer by the regional reporter, it may be premature to evaluate the effectiveness of the system. Once the system is fully implemented, the information should be adequate for EIS tracking purposes.

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*For example, the numbers and types of EIS reviews for Region V in the January-June 1974 data base of the EIS Reporting System are considerably different than Region V's own records.

2.4 AVAILABLE RELEVANT LITERATURE

The literature provides several documents that are concerned either with submitting agencies' compliance with the National Environmental Policy Act (NEPA) or with guidelines for the systematic preparation of environmental impact statements (see, for example, Refs. 3-8). EPA Region X has published two documents,[9,10] which outline EIS review procedures that should be observed within the region[9] and an assessment of how NEPA is working in the region.[10] Besides Region X's review guidelines, OFA has issued two guideline documents that have been written to provide guidance to EPA review staffs nationwide. One document[18] entitled "Review of Federal Actions Impacting the Environment" is the rock upon which EPA review procedure is based. This document* is broad in nature and defines EPA policy and review procedures with regard to environmental impact statements. The other OFA document,[1] the highway guidelines alluded to earlier, marks OFA's first attempt to provide detailed guidance for the assessment of impacts from a particular type of project. Finally, the literature offers documentation[11-13] that discusses NEPA and the role of environmental impact statements.

Reports that describe either the performance of the EPA-EIS review process or a methodology for measuring EPA performance are not very numerous. EPA-EIS review performance is touched upon by Hudson,[14] but the problem is not discussed in depth. The Surveys and Investigation Staff of the House Appropriation Committee conducted an investigation[15] for the committee into the review of environmental impact statements by EPA and the President's Council on Environmental Quality. This report[15] resulting from the investigation is quite enlightening and identifies many problems that the Argonne team also found during their regional visits. Presently, the Council on Environmental Quality is considering undertaking a project in which one aspect of EIS review effectiveness is measured by studying the EIS comment process.[16] However, no decision to begin this project has been made at this time.

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*It should be noted that this document, EPA Manual 1640.1, is scheduled for revision.

2.4 AVAILABLE RELEVANT LITERATURE

The literature provides several [illegible] with submitting agencies' compliance with the National Environmental Policy Act (NEPA) or with guidelines for the systematic preparation of environmental impact statements (see, for example, Refs. 7-9). EPA Region V has developed two documents, which outline EIS review procedures that should be observed within the region and an assessment of how NEPA is working in the region. Besides Region V's review guidelines, OFA has issued two guidance documents that have been written to provide guidance to EIS review staffs nationwide. One document, entitled "Review of Federal Actions Impacting the Environment," is the rock upon which EPA review procedure is based. This document* is broad in nature and defines EPA policy and review procedures with regard to environmental impact statements. The other OFA document, the highway guidelines alluded to earlier, marks EPA's first attempt to provide detailed guidance for the assessment of impacts from a particular type of project. Finally, the references contain documents[11] that discuss NEPA and the role of environmental impact statements.

Reports that describe either the performance of the EPA-EIS review process or a methodology for measuring EPA performance are not very abundant. EPA-EIS review performance is touched upon by [illegible],[14] but the problem is not discussed in depth. The surveys and investigation staff of the House Appropriation Committee conducted an investigation[15] for the committee into the review of environmental impact statements by EPA and the President's Council on Environmental Quality. This report, resulting from the investigation, is quite enlightening and indicates that the Argonne team [illegible]. Currently, the Council on Environmental Quality is considering undertaking a project in which every aspect of EIS review effectiveness is examined by [illegible] the EIS comments process.[16] [illegible]

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*It should be noted that this document, [illegible], is scheduled for revision.

3.0 PERFORMANCE ASSESSMENT METHODOLOGY

A step-by-step methodology to assess the performance of the regional EIS review process is developed and presented in this section. To assess EIS review performance three basic questions need to be asked and answered: (1) What is the region doing? (2) How well is the region doing it? (3) How can the regional EIS review activities be improved if necessary? The remainder of this section develops techniques that answer these questions and that result in a performance assessment methodology.

3.1 DATA COLLECTION

The first question: "What is the region doing?" may be answered if a proper data base is assembled. The necessary data can be assimilated from the following elements: the OFA EIS reporting system and regional supplemental reports.

The OFA EIS reporting system is a dynamic information collection bank that details what EISs are being reviewed by what regions, when the reviews are due, whether the regions meet their review deadlines, etc. The reporting system can be used to generate information such as how many EISs a region has reviewed over a period of time, the number of EISs reviewed by type within each region, and the number of reviewed EISs by the rating assigned.

Regional supplemental reports will be quarterly reports submitted by the regional EIS coordinator to OFA and will contain the following information:

- Listing and description of most significant EISs reviewed during the period and why these EISs were significant (time spent, rating, pre-EIS liaison, etc.)
- Description of pre-EIS liaison (with what agency on what project, developments arising from liaison, etc.)
- EIS staff assistance supplied (citizen liaison, special studies, provide provision of NEPA expertise as required, etc.)
- Interaction with other EPA offices (what interactions have occurred with the EPA program offices, NERCs, and OFA during the period and what effect these interactions have had on the regional EIS review process).

- Time allocated by category in man days (a time breakdown will be given for EIS review, pre-EIS liaison, special studies training, vacation, etc.) for EIS review staff as well as other regional EIS reviewers (time allocation will be limited to the amount of time these technical experts spend reviewing EISs).

It is envisioned that the EIS reporting system, coupled with the supplemental regional reports, will enable the OFA staff to gauge the depth and breadth of regional EIS review activities without interfering with any regional activities, and at the same time causing not more than a minimum of inconvenience to the EIS coordinator.

3.2 PERFORMANCE ASSESSMENT MONITORING

The data collection effort will enable OFA to know what the regions are doing but not how well they are doing it. This question of how well the regions are performing their respective EIS review functions is the basic question addressed by this report and is, of course, the hardest to answer.

Some authors have been strongly tempted to try to measure EIS review performance as though measuring a physical system. First, a list of relevant parameters (e.g., time spent, type of EIS reviewed, number of EISs reviewed, reviewers involved, statement rating, comment letter rating etc.) is assembled and then correlations between the parameters are attempted. Dependent variables such as EISs reviewed/man-day or specific objections/comment letter,etc., are selected as indices of performance and are then related to regional EIS review performance. Unfortunately, the results of such analyses seem to be open to various interpretation, so that their utility is questionable. The Office of Federal Activities in an in-house study found that a global and even a comprehensive set of performance parameters were, first, difficult to find and, if they could be found, difficult to weigh.[17] Moreover, the parameters cited above are more conclusive for the determination of staffing requirements than they are for performance assessment. More will be said about staffing requirements in Section 3.3

The most obvious way for OFA to evaluate a region's EIS review performance is to:

- Establish EIS review guidelines,
- Promulgate these guidelines to every region,

- Review the EISs reviewed by the region,
- Review the comment letter that the region sent in response to its own review, and
- Decide whether the region's comment letter, in light of the EIS, satisfies the promulgated guidelines.

However, it is clearly impossible for the OFA staff to review every EIS that each region reviews. Aside from the possibility of it, such a duplicate review would usurp one of the functions of each region (EIS review), and would contain no information about regional performance on related EIS activities. Moreover, throughout the interview process conducted during this study, it became obvious that many factors (e.g., staff morale, personalities, promotion incentives, attitude of regional management toward the EIS review process, etc.) related to the EIS review process that are not quantifiable contribute significantly to the success or failure of regional EIS review performance.

Although it is impossible for OFA to review every EIS and accompanying comment letter nor can they assume that EIS review guidelines are followed in every case, it is possible to review randomly selected EISs and their accompanying comment letters as a "quality inspection" device. Additionally the non-quantifiable factors can be ascertained and evaluated by visiting an EIS coordinator and conferring with him and his staff. These "selected review" and regional liaison efforts lead directly to the establishment of the methodology recommended herein.

The Methodology

The methodology for evaluating the performance of the EIS review process at the regional level is as follows:

1. Establish EIS review guidelines for each type of EIS;
2. Establish an OFA review team who will serve as an EIS liaison with the regions and who will review selected EISs and the accompanying comment letters and who will visit regions on a regular periodic basis;

3. Use the review guidelines as a baseline for the OFA review team to determine the performance of the regional EIS review;

4. Use the OFA EIS reporting system, the regional supplemental reports (see Section 3.1) and the regional visits, for the OFA review team to determine the performance of the regional EIS review process; and

5. Use procedures described in Section 3.3 for the review team to make suggestions to OFA regarding policy implementation that will improve the overall EIS review performance of all regions or a particular region.

The first step of this methodology has been implemented by OFA and should present no problem.* The second step of the methodology is the formation of an OFA review team, which will consist, initially, of two individuals. The individuals may be different for different types of impact statements. Hence, there may be several "different" OFA review teams visiting a region, but the same team will always visit the same region for the same EIS type (e.g., highways in Region V). The individuals comprising the review teams will be selected by OFA as will the number of teams. However, one individual (the review team coordinator) within OFA will be responsible for all the teams to assure that the evaluation procedures are standardized.

The various OFA review teams are charged with the responsibility of fulfilling steps two through five. They will review EISs and accompanying regional comment letters. The number reviewed by each review team will depend, of course, on the region and project type. The exact number/team will be decided by OFA, but 3 EISs per project type per region may be a reasonable initial condition. The review team will decide from the reviews and accompanying comment letters whether the guidelines have been adhered to and, if not, the areas of weakness. The regional visits are designed to determine the factors that have caused success or failure in regional compliance with the guidelines.

During the regional visits the OFA review team also will discuss with the EIS coordinator the information contained in the EIS reporting system and the regional supplemental reports. The purpose of this conference is to ascertain subjective factors that may help to supplement the numbers contained

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*OFA has already prepared guidelines for highways[1] and are presently preparing guidelines for airports.

in these reports and to clarify the overall EIS review performance of the region.* Initially the regional visits will take place semiannually. This means that each general type of EIS reviewed within a region will be discussed with the EIS coordinator semiannually.

Based on their own reviews, the regional visits, the EIS reporting system, and the regional supplemental reports, the OFA review team will evaluate the performance of the regional EIS review process. These evaluations will take place annually or as deemed necessary by OFA and submitted to the OFA review team coordinator.** The performance evaluation will also contain suggestions for performance improvement, which will be based partly on items discussed in Section 3.3.

3.3 PERFORMANCE IMPROVEMENT

If the performance of a particular region is not satisfactory or is marginal, recommendations must be made to the OFA review team coordinator regarding any policies that might be implemented to enable a region to improve its performance. In this section three potential problem areas are discussed.

3.3.1 Appropriate Staffing

A region that is heavily under- or over-staffed may not be able to perform its EIS reviewing and related processes in a satisfactory manner. The number of people needed by a region for EIS review and related activities can be determined from the staffing algorithm presented in Appendix B. This algorithm provides a handle for the determination of manpower allocation and should be used by OFA for this purpose. The algorithm is not for preparing budget estimates but for determining the appropriate staffing level for a region's EIS related activities. Hence, if a region's performance is not satisfactory, the algorithm, when employed, may indicate that the region is not adequately staffed.

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* It must be pointed out that the regional visits are in no way intended to reduce the importance of the EIS coordinator. To the contrary, he is the key individual and must be consulted before any member of the regional EIS review activity is interviewed. The purpose of these interviews is to obtain a clearer picture of regional EIS review activities and to improve OFA-region communications.

**When more than one OFA review team is involved with one region, the OFA review team coordinator will consolidate the reports and assign an overall performance evaluation.

3.3.2 Thoroughness and Uniformity of EIS Review

The EIS review guidelines that are being developed by OFA will attempt to ensure that each type of EIS is reviewed uniformly and thoroughly throughout the country. However, these guidelines will be somewhat general in nature and some time will elapse before all of the OFA guidelines are prepared. In order to improve a region's performance in the interim, a detailed checklist, to be inspected by the OFA review team for completeness, should be prepared by the regional EIS coordinator for each type of EIS. The EIS reviewers will use the checklist, sign-off on it, and file it with a copy of the region's comment letter on the EIS. Thus, the OFA review team and the EIS coordinator will have a record that, nominally at least, assures that the EIS has been reviewed in a thorough manner.

Use of a checklist will enable a reviewer to double check that he/she has covered all of the important environmental aspects of a project. However, for the checklist to be useful, it must be rather specific and concrete, as shown in Table 1. All EIS reviewers should be supplied with checklists.

3.3.3 Dissemination of Information

The effective dissemination of information is an important factor in the success of the regional EIS review process. Seminars conducted both by OFA and by the regions for specific EIS review and related areas can do much to ensure that regional reviewers have received and fully understand EPA policy in specific areas. These seminars will also promote discussion and improvement of the various OFA guidelines. The seminars should be restricted to specific EIS review areas in order to keep the number of attendees at a reasonable working level.

3.4 SUMMARY OF THE PERFORMANCE ASSESSMENT METHODOLOGY

The performance assessment methodology developed in this section is summarized below and shown in Fig. 1.

- OFA EIS Reporting System
- Regional Supplemental Reports
  - Most significant EISs reviewed
  - Description of pre-EIS liaison
  - EIS staff assistance supplied

Table 1. Example Checklist[a]

Dredging Operations
Corps of Engineers Projects

A. What are the characteristics of the dredge material?

1. Is the material sandy or gravel?

2. What is the particle size?
   Distribution of the sedimentary material.

3. Does the dredge material produce a "standard elutriate" where no "major constituent" is more than 1.5 times the same constituent in the water from the proposed disposal site?

4. Has a core sample been taken and the sediment checked on a dry weight basis for

   a. mercury (limited to 1 ppm),
   b. cadmium (limited to 2 ppm),
   c. lead (limited to 50 ppm),
   d. zinc (limited to 130 ppm),
   e. oil and grease (limited to 1500 ppm)?

5. Has the elutriate been checked for

   a. immediate oxygen demand,
   b. 5 day BOD,
   c. suspended solids,
   d. organologens,
   e. phosphorous,
   f. total kjeldall nitrogen,
   g. nitrate?

B. What is the method of disposal for

   a. pipeline discharge,
   b. clamshell,
   c. barge,
   d. weir,
   e. land disposal?

C. If a weir is used, is monitoring at the weir provided?

[a]This checklist is given as an example only and is not meant to be complete.

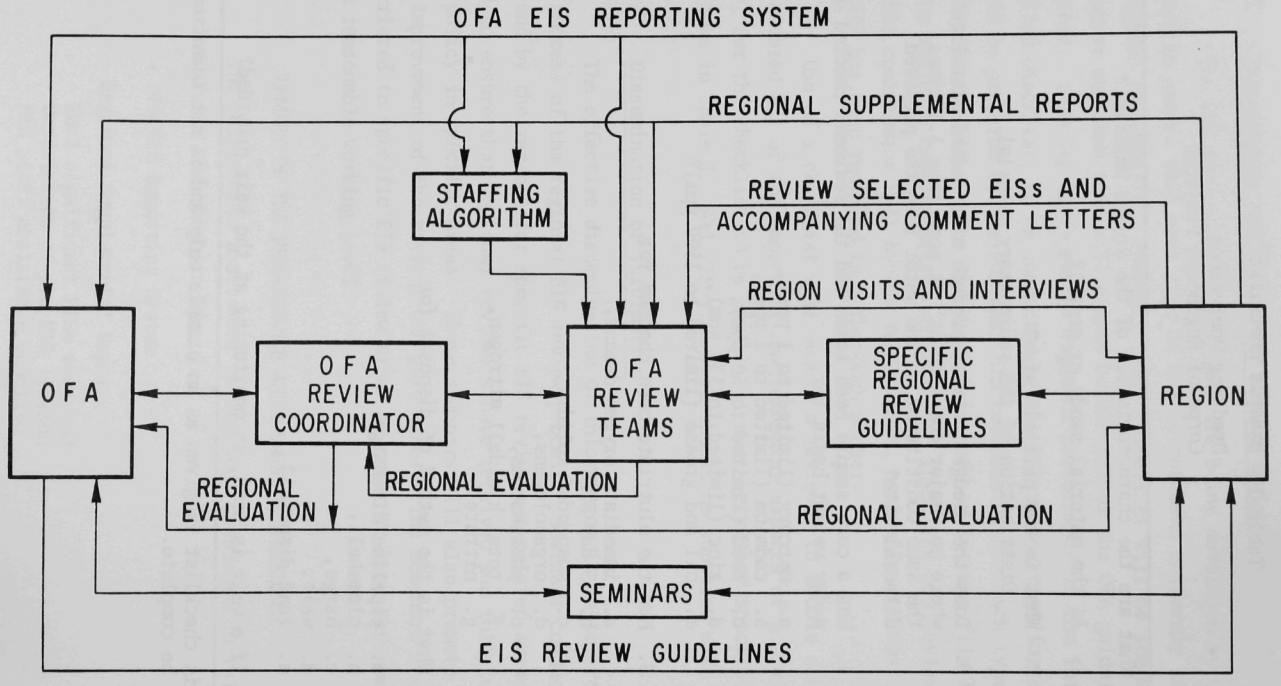

Figure 1. Performance Assessment Methodology

-Interaction with other EPA offices
-Time allocated for EIS review and related activities

- Establishment of EIS review guidelines

- Formation of OFA Review Teams

  - Designation of OFA review team coordinator
  - Review selected EISs
  - Review accompanying regional comment letters
  - Have access to OFA EIS reporting system
  - Receive regional supplemental reports
  - Visit regions
  - Evaluate regional performance
  - Give constructive criticism

- Tools for Evaluation Assistance

  - Staffing algorithm
  - Specific review guidelines
  - Seminars

3.5 IMPLEMENTATION

The OFA review teams should be designated as soon as possible in order that the methodology described previously can be thoroughly implemented. To achieve a smooth transition from the OFA-regional interaction that now exists to the OFA review team concept suggested by this study, it is recommended that Phase 2 of this study be initiated. The purpose of Phase 2 would be to validate and, as required, refine the methodology developed in Phase 1.

Essentially, Phase 2 would consist of a nine-month (3-quarter) implementation of the proposed methodology. The first 3 months would be undertaken by a contractor who would supply an "OFA review team" from within its own staff. The next six months, the contractor's "team" would work together with the OFA review teams, instructing them in the methodology and establishing liaison with the regions.

- Interaction with other OPA offices
- Time allocated for EIS review and related activities

• Establishment of EIS review guidelines

• Formation of OPA Review Teams

- Designation of OPA review team coordinator
- Review selected EISs
- Review accompanying regional comment letters
- Have access to OPA EIS report system
- Receive regional supplemental report
- Visit regions
- Evaluate regional performance
- Give constructive criticism

• Tools for Evaluation Assistance

- Staffing algorithms
- Specific review guidelines
- Seminars

3. IMPLEMENTATION

The OPA review teams should be designated as soon as possible in order that the methodology described herein can be thoroughly implemented. To achieve a smooth transition from the OPA-regional interaction that now exists to the OPA review team concept suggested by this study, it is recommended that Phase 2 of this study be initiated. The purpose of Phase 2 would be to validate and, as required, refine the methodology developed in Phase 1.

Essentially, Phase 2 would consist of a nine-month (three-quarter) implementation of the proposed methodology. The first 3 months would be undertaken by a contractor who would supply an "OPA review team" from within its own staff. The next six months, the contractor's "team" would work together with the OPA review teams, instructing them in the methodology and establishing liaison with the regions.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The following conclusions are based upon interviews with regional personnel and staff members of the Office of Federal Activities as well as on a perusal of available relevant literature.

1. A lack of communication exists between OFA and the regions with respect to the EIS review process.

2. Hand in hand with a lack of communication is the negligible amount of guidance from OFA as perceived by individual EIS reviewers.

3. There is little uniformity in the actual EIS review procedure used by various reviewers. Little training is provided EIS reviewers to ensure a uniform approach.

4. The location of the EIS review staff within the region's organizational structure plays a large role in the effectiveness of the review staff.

5. The type of review staff (technical, non-technical, etc.) has a great deal to do with how completely an EIS is reviewed. In general, it appears that a non-technical staff cannot and does not sufficiently monitor the review efforts of the regional technical experts. Moreover, since the technical experts sense this inability on the part of the review staff, they place EIS review low on their list of priorities.

6. The computerized EIS tracking system instituted by OFA seems well accepted by the individuals involved at the regional level.

7. Neither the OFA staff nor regional personnel seem to know the role of the EPA National Environmental Research Centers (NERC) in the EIS review process.

8. Rating regional EIS review efficiency on the basis of comment letters, alone, should be avoided, as should be ratings based on EISs reviewed/man-hr, etc.

9. It is most important that OFA and the regions make a serious attempt to establish a channel for information exchange.

4.2 RECOMMENDATIONS

It is the recommendation of the authors of this report that the methodology outlined in Section 3 be initiated as soon as possible. Concurrent with this initiation, we suggest that Phase 2 of this project be

begun so that the OFA review team can be integrated as smoothly as possible into the performance measurement procedure.

We also recommend that the regions give serious consideration to placing the EIS review activity directly under the Regional Administrator or Deputy Regional Administrator. Most EIS coordinators feel that the visibility of management provided by such an organizational arrangement would improve the quality of the EIS review process.

APPENDIX A
Regional EIS Reviewers

Region IV - Atlanta

		Background	Function	Yrs Experience in EIS Review
Surveillance and Analysis Division				
EIS Review Staff				
Frank Redmond	EIS Review Coordinator		Coordinates EIS reviews	3-1/2
John Keisler	EIS Reviewer	Technical Writer	Writes EIS comment letters	3-1/2
Jenny Munro	Clerical Staff	Clerical	Operates logging operation	3-1/2
Other Surveillance and Analysis Branches				
Dave Hopkins	Chief EIS Branch	Sanitary Engr.	Planning reviews controversial plans	
Lee Tebo	Surveillance & Analysis Div., Water Lab, Athens	Biology	Reviews biological effects of EIS's	
Other Divisions				
Chuck Wakamo	Categorical programs	Engineer	Radiation related EIS's	
Joe Riley	Air & Water Division	Engineer	Air related EIS's	
Brian Beals	Air & Water Division Technical Assistance Br.	Engineer	Air related EIS's	
Charley Kaplin	Enforcement	Engineer	Thermal related EIS's Nuclear power plants	
Jim Crooks	Air & Water Division	Hydrologist	Water resources	
Arthur Livton	Enforcement	Mechanical Engineer	Federal facilities	
Phil Murphey	Enforcement		Dredge & fill EIS's	
Kent Williams	Catagorical programs	Mechanical Engineer	Noise relayed EIS's	

Region V - Chicago

EIS Review Staff

Surveillance and Analysis Division

		Educational Background	Function	Years Experience in EIS Review	No. EISs Reviewed per Year	EIS Review Involvement
Gary Williams	EIS Review Coordinator	Civil Engineer	Highways Land Management Power Plants Water Resource	4	175	Heavy Review Effort and EIS Review Comment Coordination
Robert Kay	EIS Reviewer	Geology		4		
Joseph Sovcik	EIS Reviewer	Biologist		4		
Bill Franz	EIS Reviewer	Environmental Eng.		2		
Barbara Taylor	EIS Reviewer	Biologist				
Cris Potos	Water Quality Standards	Civil Engineer				
Jack Chicca	Program Support Branch	Civil Engineer				
Dave Hogland	Air Planning Section	Civil Engineer				
Gene Magdecki	Water Supply Division	Civil Engineer				

Enforcement Division

David Kee	Air Section					
Gary Milburn	Technical Coord. Section					
Vic Saulys	Permits Branch					

Other Branches in Surveillance and Analysis Division

Etam Viktora	Ill. District Office	Sanitary Engineer	Water Resource Projects	2	20	Light Advisory Effort
Charles Elly	Mich-Ohio Dist. Office	Sanitary Engineer		2	40	
Curtis Ross	Indiana Dist. Office	Sanitary Engineer		3	10	
Orville Macomber				2		
Keith Beseke	Wisc.-Minn. Dist. Office	Biologist		3	40	
David Kraus	Great Lakes Surv. Branch	Sanitary Engineer	Dredging and Maintenance Projects	2	30	Moderate Advisory

Air and Water Division

John Eric Stenson & staff of 3 Engineers	Planning Branch	Water Resource Planner	Water Resource Projects	2-3	50	2 Man/Years Effort EIS Review & Related Project Reports for Water Quality

Region VIII - Denver

Air and Water Programs EIS Review Staff - Environmental Evaluation Branch		Background	Function	Experience in EIS Review
Bill Geise	EIS Review Coordinator	Civil Engr., Law	NEPA policy	3
Mike Gamsecki	EIS Reviewer	Philosophy, Chemistry	Energy, coal development	2-1/2
Dennis Nelson	EIS Reviewer	Wildlife, Biology	Federal land management Urban, regional planning	1
Willie Chavez	EIS Reviewer	Co-op		Co-op
Steve Lamish	EIS Reviewer	Geology, Environmental Planning	Water resources	2-1/2
Joel Webster	EIS Reviewer	Civil Engineering	Transportation, highways	3
Weston Wilson	EIS Reviewer	Geologist	Oil shale development	4 mos.
2 secretaries				
Other Branches in Air and Water Programs				
Dom Henderson	Planning Branch	Meteorology	Meteorological related projects	
John Fillbrook	Planning Branch		Air quality regarding highways	
Bruce Perry	Planning Branch		Forest service projects	
John Tucker	Planning Branch		Water quality planning	
Other Divisions				
Bob Simmons	Hazardous Materials Control Division		Noise related projects	
John Yeagley	Radiation & noise control		Uranium milling, radiation	
John Hartaway	Energy Office		Energy related projects	

Air and Water Division

EIS Review Staff		Background	Function
John Wise	EIS Review Coordinator		
Pete Uribe	EIS Reviewer	Geologist	Water resources
Ed Marra	EIS Reviewer	Engineer	Transportation

Other Branches in Air and Water Division

Marla Brenner	Hazardous Materials Division, Noise		Highways, airports regarding noise
Imants Kreese	Air and Water Division, Planning	Transportation Engineer	Highways
Charlotte Hopper	Air and Water Division, Planning	Meteorologist	Air quality modeling/ meteorology
Dick Procunier	Hazardous Materials Division, Noise	Acoustic Engineer	Noise related projects
Norman Grib	Enforcement Division, Permits	Engineer	Dredging & navigation projects
Jake MacKenzie	H M Division, Pesticides	Chemical Engineer	All projects regarding pesticides, herbicides
Bob KuyKendall	Hazardous Materials Division, Pesticides		All projects regarding pesticides, herbicides

Region X - Seattle

Management Division

EIS Review Staff	EIS Coordinating Branch	Background	Function
Walter Jaspers	EIS Reviewer	Generalist	Planning, coordination
John Sainsbury	EIS Reviewer	Biology	Forest service projects, Corps of Engr. projects, dredging
Roger Mochnick	EIS Reviewer	English	Highway projects
Francine K. Coleman	EIS Reviewer	Biology	Land use, forest service
B. Mirasol	Secretary		Logging system

Other Branches in Management Division

Hurlon C. Ray	Assistant Regional Administrator for Management Division		Planning Review

Other Divisions

Anita J. Frankel, Planner	Air and Water Division, Air Branch		Highways
George Abel	Air and Water Division Water Branch		Water resources, hydro-electric plants
Mike Watson	Hazardous Materials Division Water Branch		Forest service regarding pesticides
Edward Cowan	Hazardous Materials Division Radiation and Noise Branch		Power plants
Deborah J. Humphrey	Hazardous Materials Division Noise Representative		Highways regarding noise
Bill Clothier	Hazardous Materials Division		Sivilcultural related projects
Robert Coughlin	Regional Economist		Economic impacts
Tobias Hegdahl	Hazardous Materials Division Solid Waste Management		Solid waste related projects

APPENDIX B

A Staffing Algorithm

APPENDIX B. A Staffing Algorithm

The basic methodology in developing an approach for the assessment of the regional EIS review system was to conduct task studies of representative regions having a cross-section of EIS review activities. The purpose of this effort was to ascertain how tasks were clustered into EIS review functions. These clusters form the basis of work to be accomplished by specific types of personnel interacting with the EIS review coordinator.

As a result of the detailed review of tasks and their associated time requirements, it was possible to identify parceled work responsibilities.

Time requirements for any specific EIS review varied greatly, depending on the complexity of the EIS, the final rating, and the comprehensiveness of the EIS review. By identifying factors influencing manpower resource requirements for EIS review, it was possible to develop general staffing patterns based upon observed parameters.

In addition to an intensive manpower study of five regional offices, a specific time study of 818 man-days of EIS review activity was used to establish quantitative manpower resource requirements for EIS review staff responsibilities.

These general staffing parameters and specific quantitative time studies have been converted into an EIS review staffing algorithm that can be used to identify and give guidance for determining manpower regional resource requirements. The technical section on the staffing algorithm examines the development of guidance materials that can be helpful in estimating staffing requirements for regional EIS review activities.

B.1 APPROACH

Task analysis or a task study approach is the process of examining jobs by observing the tasks that comprise those jobs. In this case, tasks were to be described in terms of their operational components and the resource requirements to perform those components. The following definitions were used:

1. A Job is considered a grouping of functions and tasks that must be performed to meet assigned organizational goals. EIS review and EIS training are examples of jobs.

2. A Function is a distinct activity that must be performed in a job. Highway EIS review and dredging EIS review are examples of job functions.

3. A Task is considered a group of unitary operations having a common purpose, directed toward the same specific output, and usually occurring in close temporal proximity. Analysis of metal concentrations in sediment dredgings is an example of a task.

4. A Man-year of effort is the equivalent of one manpower resource requirement for one year to perform jobs, functions, and tasks. In many cases one man-year of effort may be divided among many individuals, each expending a portion of their working time on specific tasks.

5. Knowledge is the information required by the task performer to successfully complete the task.

6. Skills are the behaviors with unique requirements for speed and accuracy that must be learned and practiced before they can be performed adequately.

The basic approach taken to justify and to initially describe the tasks performed and the staffing requirements of regional EIS staffs was to interview agency personnel and have them describe their jobs in detail. The agencies visited and the people interviewed were chosen to maximize the likelihood that:

1. Coverage of jobs, functions, and tasks would be relatively complete;

2. Task performers interviewed would represent a cross-section of all agency personnel who participate in EIS review; and

3. The staffs observed would be representative of the variety of organizational and philosophical approaches to EIS review across the country.

Pilot Study

The goal of the pilot study was to make a preliminary survey of the daily operations of a representative EIS review staff. This preliminary survey was useful in developing a strategy and method for observing other regional operations. Region V was selected for the pilot study because of its proximity to Argonne National Laboratory.

The data collected from the pilot study resulted from a series of interviews with staff members working in the major functional areas of the agency's EIS activity. The first interview was with the EIS review coordinator who described the history, organization activities and staffing of the region. Following this, other interviews were held. Each interview was aimed at gathering the following information from the respondent:

1. Functions performed;
2. Tasks routinely performed;
3. Objectives of each task;
4. A brief outline of the elements or steps in each task; and
5. A summary of the time and resources used to complete each task.

Additional comments were solicited regarding the respondent's feelings toward the regional EIS review effort. From the pilot study, a list of preliminary jobs, functions, and tasks was constructed. Additional information was collected on potential site visits to other regional offices.

Site Visit Selection

The goal of regional site visit selection was to identify regions that would best represent the spectrum of EIS Review activities that currently exist in EPA. As a result of a meeting with OFA personnel, the following regions were visited to develop the criteria used in this study:

Region IV

Region V

Region VIII

Region IX

Region X

B.2 FACTORS INFLUENCING STAFFING REQUIREMENTS

The initial step in development of staffing guidance materials is identification of the factors influencing regional resource requirements. During regional site visits and resultant task studies, the following factors were identified as having staffing implications:

1. EIS review staff background;
2. Availability of associate EIS reviewers;
3. Number of EISs reviewed;
4. Types of EISs reviewed;
5. Quality of the EISs submitted;
6. Other responsibilities of the EIS review staff; and
7. Regional emphasis on EIS review.

During subsequent analysis of data collected during regional site visits, a primary objective was to determine the qualitative and quantitative influence each of the above parameters had on EIS review staffing. Specifically, the idea was to quantify the manpower resource impact of each of these parameters. At the start it should be made clear that these parameters are empirical in nature and subject to change. A basic observation made early in this study was that the EIS review process is dynamic. EISs submitted to EPA are becoming more sophisticated. As submitting agencies become more experienced in EIS writing, and as EPA becomes more experienced in EIS review, staffing parameters established will not remain static. To keep EIS review evaluation current, staffing guides should be continuously updated.

B.2.1 EIS Review Staff Background

Since enactment of the National Environmental Policy Act (NEPA) of 1969, the process of EIS writing, submission review, and comment has evolved with the establishment of procedures and policies that were discarded if they did not work, only to try new policies and procedures. In EPA the EIS review evolution proceeded independently in each region, creating a variety of approaches for evaluating Environmental Impact Statements.

Because NEPA is primarily concerned with Federal facilities, EPA regional EIS review has been organizationally located with Federal Activities. In some cases, Federal Activities came under the Management Division, while in other regions it is located in the Surveillance and Analysis Division or the Air and Water Programs Division. Some individuals chosen to supervise EIS review activities were technically oriented while others were not. Some EIS review supervisors viewed their activity as a technical job, while others viewed their jobs as strictly administrative and non-technical. Thus the evolvement of EIS review staffs began.

Site visits indicate that regional EIS review staffs can be divided into three basic varieties:

1. Technically-oriented EIS review staff
2. Semi-technically oriented EIS review staffs;
3. Non-technically oriented EIS review staffs.

It has been observed that the type of staff that exists also impacts the manpower resource allocation requirements for that staff.

Technically-Oriented EIS Review Staffs

Such a staff is characterized as follows:

- Technically-oriented EIS staffs perform the majority of EIS review related tasks internally;
- Technical staffs send EISs for external review on complex matters or for agency coordination and information purposes; and
- Technical staffs can handle all routine EISs and many non-routine EISs internally including:
  - transportation projects
  - Corps projects and water resource EISs
  - forest service projects
  - most airports and some FPC projects.

Technically-oriented EIS review staffs have several distinct advantages:

1. The EIS review coordinator has direct control over EIS reviewers;

2. Resource planning and work load estimates are not obscured by other agency priority projects; and

3. Technically-oriented staffs ensure a uniformity of review effort and approach since the same direct review staff evaluates all EISs.

Non-Technical EIS Review Staffs

At the opposite end of the spectrum lies the non-technical EIS review staff, which can be characterized as follows:

- Non-technical staffs disseminate EISs to other groups, assimilate comments and write comment letters; and

- Non-technical staffs act as coordination centers only and provide no other services.

Non-technical review staffs generally evolved from regions where Federal Activity personnel were more management-oriented and had the following attitudes regarding EIS review:

1. The experts from other programs should review EISs, since these individuals have a working knowledge of specialized technical fields.

2. The EIS staff is not the place to develop agency policy on EIS issues. This function can best be conducted in other program offices.

3. The number of EISs submitted varies quarterly, and it is difficult to judge the number of people who should be set aside strictly for EIS review.

Clearly, this approach severely limits the EIS review coordinator's control over EIS reviewers. Hence, the coordinator is placed at the mercy of other programs. The quality and priority of EIS reviews becomes difficult to monitor and control in non-technical staffs. While it allows for fewer resources requirements on the EIS staff, manpower not included on the EIS staff must be included in other program elements.

Semi-Technical EIS Review Staffs

Semi-technical EIS review staffs comprise the third approach to EIS review.

- Semi-technical EIS review staffs perform routine EIS review tasks internally.
- Semi-technical staffs send the majority of EISs to other programs for review and comment.

This moderated approach to EIS review attempts to involve other programs in the majority of EIS review activities while handling routine tasks internally. Although the EIS review coordinator has more control over his reviewers, he is still highly dependent on other program elements for technical and resource assistance.

B.2.2 The Availability of EIS Reviewers

During task studies of regional offices, a variety of organizational structures was encountered. Such non-uniformity was not unexpected since EPA regions have been traditionally autonomous in nature. In three of the regions (see Table 2), EIS review staffs were sections, while in two regions EIS review was a branch-level activity. EPA-wide, one region places EIS review as a staff function under the Regional Administrator, four regions place EIS review at the branch level and five regions place EIS review as a section-level activity.

Besides differences in organizational level, regions locate EIS review in different divisions. Of the ten regions, five regions locate EIS review in Air and Water Programs, two regions locate EIS review in Surveillance and Analysis, one places it in the Management Division, one in Environmental Programs, one as a staff to the Regional Administrator. While organization influences EIS importance and visibility, the organizational placement (i.e., branch, section, etc.) only appears to affect staffing when discussion is directed toward promotion potential, compensation, and motivation for attracting staff. Branch level EIS review staffs provide greater flexibility for attracting more experienced EIS review personnel who can be promoted to the GS-13 or 14 level. Other than promotion potential, the organizational placement of the EIS review staff does not appear to affect total manpower resource requirements.

Table 2. EIS Review Staff Organizational Location

Region	EIS Staff Level	Division	Branch	Section
I	R.A. Staff			
II	Branch	Environmental Programs	- Environmental Impacts	
III	Section	Air & Water	- Environmental Impacts	EIS Review
IV	Branch	Surv. & Anal.	- EIS Review & Preparation	EIS Review
V	Section	Surv. & Anal.	- Federal Activities	EIS Review
VI	Branch	Air & Water	- Federal Assistance	
VII	Branch	Air & Water	- Environmental Evaluation	
VIII	Branch	Air & Water	- Environmental Evaluation	
IX	Section	Air & Water	- Planning	Interagency Activities
X	Section	Management	- Federal Activities	EIS Review

The location of the EIS review staff (i.e., Surveillance and analysis, Management Division of Air and Water Programs) appears to be significant in obtaining cooperation from associate reviewers. In most of the regions visited, Air and Water Programs provided the majority of technical assistance to EIS reviews. Associate reviewers (those not on the EIS review staff), all have primary loyalty and accountability to their division lines. There must be strong motivation from high levels to maintain deadlines and to obtain comprehensive reviews from associate reviewers. When such motivation does not exist at high levels, the EIS review coordinator must become a "good salesman" to promote loyalty and a "hard working attitude" for his projects. If EIS review is in the same division as the majority of associate reviewers, cooperation and manpower availability is more prevalent.

The availability of manpower is not a tangible resource in the context of this report. Theoretically, associate reviewers may contribute three man-years of effort to EIS reviews. However, in actuality, they may contribute only two man-years because of other more pressing projects. Indeed, under proper conditions they may also contribute four man-years of actual effort.

B.2.3 The Number of EISs Reviewed

Workload strongly influences EIS review staffing requirements. Data obtained from EPA's EIS review data system indicates that during the period January to December 1973, over 1,000 EISs were reviewed (see Table 3). In 1974 this number is likely to be significantly larger. Hence, demands being placed on EIS review staffs will be increasing. Increased activity will come from areas such as EISs on EPA projects and regulations, indirect source reviews, and new source discharge requirements. While the EIS review staff background and the availability of EIS reviewers were somewhat intangible and qualitative in nature, the number of EISs reviewed is a more quantitative parameter. A data system has been developed by OFA allowing the number of EISs reviewed to be used as a manpower resource estimator. Discussions centering around these estimates will appear later in the report.

Table 3. Number EISs Reviewed

Region	EISs Reviewed Jan-June 1973	EISs Reviewed Jan-June 1974
I	54	53
II	74	85
III	116	156
IV	204	284
V	153	236
VI	102	142
VII	83	116
VIII	98	110
IX	94	123
X	106	187
	1084	1492

B.2.4 The Types of EISs Reviewed

Just as the number of EISs reviewed influences a region's workload, so does the types of EISs reviewed. While EISs are reviewed from a variety of agencies covering many types of projects, they can be categorized into two general types.

The most prevalent EIS received by regional offices are transportation projects. Agency-wide, over 42% of all projects received deal with transportation issues. In some regions transportation projects are responsible for over 50% of the number of EISs received. However, this does not mean that they account for 50% of the EIS review resource time. EIS reviewers indicate that transportation projects, forest service, and airport projects take less time to review than other types of projects. Clearly, a region with many easy types of EISs does not need the same manpower resources as a region with the same amount of difficult types of projects. Tables 4-6 present regional distributions of the most frequently reviewed projects. In almost all cases, transportation projects are the most frequently reviewed followed by Corps projects, forest service plans, airports, and power plants. Agency-wide, these five categories account for over 80% of all EISs reviewed.

Table 4. Transportation Projects Related to EISs Reviewed (Jan - June 1974)

Region	Total Projects	Transportation Projects	Other Projects
I	53	20	33
II	85	24	61
III	156	51	105
IV	284	155	129
V	236	133	103
VI	142	57	95
VII	116	64	52
VIII	110	38	72
IX	123	34	89
X	187	57	130
TOTAL	1492	633	869

Table 5. Types of EISs Reviewed
Number in Each Category
(Jan - June 1974)

Region	Transportation Projects	Corps of Engineers	Forest Service and Land Management	Airports	Power Plants
I	20	18	2	1	3
II	24	45	3	2	—
III	51	43	17	8	5
IV	155	39	27	17	5
V	133	50	17	15	4
VI	57	40	19	11	3
VII	64	25	8	8	1
VIII	38	10	24	8	2
IX	34	26	32	2	2
X	57	32	36	5	3
TOTAL	633	328	185	77	28

Table 6. Types of EISs Reviewed
Percent in Each Category
(Jan - June 1974)

Region	Transportation	Corps of Engineers	Forest Service	Airports	Power Plants	Total % of Projects
I	37	34	4	2	6	83
II	28	52	2	2	—	84
III	32	28	11	5	3	79
IV	54	14	10	6	2	86
V	56	21	7	6	2	92
VI	40	28	13	8	2	91
VII	55	22	7	7	1	92
VIII	35	9	22	7	2	75
IX	28	21	26	2	2	79
X	30	17	19	2	2	75
AVERAGE	42	22	12	5	2	83

In a sample study of 80 EISs, highway projects rated LO took an average of 2.1 man-days of technical time to evaluate. Agricultural projects, however, receiving the same rating averaged 5.7 man-days of technical review time. Table 7 presents various time requirements of various projects receiving LO ratings.

Table 7. Time Requirements for Various Types of EISs Receiving LO Ratings

Type of EIS	Man-days of Technical Effort Required
Agriculture and Forest Service Projects	5.7
Corps Projects	6.8
FPC Projects	3.3
Transportation Projects	2.1
Airports	1.9

B.2.5 The Quality of EISs Submitted

In addition to the number and types of EISs reviewed, the quality of an EIS submitted becomes a significant factor in manpower resource requirements. LO-1 rated EISs may take one man-day of technical effort to review, while a controversial EU rated project may take a quarter of a man-year to review. The following data of sample EIS review times shown in Table 8 was obtained from Region V. The data was collected by asking all personnel spending time on an EIS to record the amount of time they spent on the impact statement. LO rated projects generally took about four man-days of technical time and 3/4 man-day of secretarial time. ERs took 12 days of technical time and 2-1/4 man-days of secretarial time. EU projects took 16 technical man-days and four secretarial man-days of effort per project.

Table 8. Time Requirements as a Function of Rating (Region V)

Rating	No. Projects	Technical Manpower	Clerical Manpower	Technical Time Per EIS	Clerical Time Per EIS
LOs	67	270	51	4.0	.8
ERs	12	145	27	12.1	2.3
EUs	1	16	4	16.0	4.0
(TOTAL)	80	431	82 (AVERAGE)	5.4	1.0

B.2.6 The Associated Responsibilities of the EIS Review Staff

To this point the only agency activity that has been discussed has been EIS review. Indeed this is their activity of primary concern. Unfortunately, other responsibilities of EIS review staffs cannot always be separated from Federal EIS review when talking about resource requirements. EIS review activities can be divided into four general categories:

1. Federal EIS review,
2. EIS preparation,
3. EIS coordination, and
4. EIS review related functions

Federal EIS review is self-explanatory and is the primary subject of this report. EIS preparation takes place, coincidentally, with EIS review in four of the EPA Regions.

A regional* evaluation of 818 man-days of EIS review activity indicated that about 65% of a staff reviewer's time is spent on an EIS. The table below of EIS coordination activity presents a sample distribution of the time requirements of EIS review staff members. Such a distribution will vary slightly depending on the regional emphasis on training and coordination. Given 250 man-days of actual effort in one man-year of allocation, only about 160 days are available for technical review.

*Data from Region V.

EIS Review Activity

	Man-days	%
Actual review time	513	63
Technical assistance	76	9
Program coordination	182	22
Conferences	32	4
Staff training	15	2
	818	100%

(Data from a sample of 818 man-days over six months, Region V.)

The remaining time is spent in program coordination, technical assistance, and training.

The last category of EIS associated activities deal with other EIS review related functions not discussed above. Such activities include state EIS reviews, negative declarations, EIS environmental reports, and pre-EIS activities such as seminars and interagency training. The scope of associated activities varies from region to region and should be included as part of any staffing guidelines used to estimate EIS resource needs.

B.2.7 Regional Emphasis on EIS Review

Determining the regional emphasis on EIS review is a difficult task. The importance of EIS review in a region is highly dependent upon the Regional Administrator's (RA) or Deputy RA's philosophy on the usefulness of EISs. Some regions place strong emphasis on EIS review because they feel that NEPA is an EPA policy-making tool and should remain highly visible. Hence, EISs are viewed as the public's primary contact with EPA. Regions with such a philosophy tend to place great importance on EIS review and comment letters often are signed-off at very high levels (see Table 9). In some cases reviewers are asked to initial the final comment letter that is read and signed by the RA. In general, regions that place great importance on EIS review, receive more cooperation from associate reviewers. When reviewers know that their comments are going to be read by upper management, they appear to display greater enthusiasm for their review effort. Some regions were observed to downplay the importance of EISs. NEPA was considered a nuisance rather than a policy tool. In such regions this "don't rock the boat" attitude

permeated the entire region. While the differences in regional attitude cannot be factored into a staffing algorithm, they should be noted when evaluating the total EIS review activity.

Table 9. Sign-Off Procedures on EIS Review Comment Letters

Region	LOs	ERs	EUs
IV	Branch	Branch	Regional Administrator
V	Branch	Division	Regional Administrator
VIII	Branch	Division	Regional Administrator
IX	Regional Admin.	Regional Admin.	Regional Administrator
X	Section	Division	Regional Administrator

B.3 An EIS Staffing Algorithm

The first part of this section discussed factors influencing the manpower resource requirements of an EIS review staff. Some of the factors discussed were behavioral in nature. While such factors affected the "efficiency" of an EIS review staff, they are not tangible measurable parameters that can be used to develop staffing guidance materials. These tangible factors must be discussed and brought to the attention of regional decision makers who influence these behavioral attitudes.

The parameters that are tangible, however, can be used to develop a guideline for estimating the approximate manpower resource needs of a region. It must be made clear at the start, that the algorithm developed in this study is only a start. It should be corrected, updated, and expanded as data becomes available.

B.3.1 Manpower Requirements for a Basic EIS Review Staff

To begin the algorithm development, manpower resource needs for a basic EIS staff are presented. Next, additional manpower requirements are added for various parameters influencing EIS review staffing. The resultant formula can be applied to any region by adding the additional manpower demands used in that region to the base load.

Discussions with regional reviewers, supported by a study of 80 EISs, indicates that a regional cross-section of LO rated projects takes four man-days of technical time and less than one man-day of clerical time per EIS.

Given a base load of 150 EISs reviewed, clerical time would amount to approximately 120 man-days per year. Technical man-days required would total 600 man-days per year. To develop a staffing matrix for a base load, the following approach was applied:

- One clerical position should be allocated for general clerical duties including data logging operations and comment letter typing and filing. While only 120 days of clerical time is indicated, additional clerical time is needed for activities not directly associated to specific EISs such as answering telephones, preparing travel vouchers, etc.

- Six hundred man-days of technical manpower can be applied several ways. Non-technically-oriented EIS staffs will assemble comment reviews and write comment letters from those reviews. On such staffs, three man-days of technical effort must be supplied from outside the staff (associated reviewers). The remaining man-year is provided by the EIS review coordinator and technical staff.

On technically oriented EIS staffs, four man-years of technical effort may be divided several ways:

1. Two man-years of direct and staff effort and two man-years of associate review effort.

   This approach allows for outside expertise on controversial or special projects and allows for regional program coordination.

2. Three man-years of direct staff effort and one man-year of associate staff effort.

   This approach provides for a slightly more self-contained EIS review staff.

In any case, four technical man-years of effort are suggested. This figure is obtained by applying 60% to 250 working days (65% is the amount of time actually available for EIS review). The result is 150 man-days of review time per man-year of effort. In addition to four man-years of technical effort, one of clerical effort, the base EIS staff requires one man-year of managerial direction supplied by the EIS review coordinator. Thus, Table 10 indicates a base resource requirement of six man-years. This result appears to be substantiated by observation of regional staffing.

Table 10. Manpower Requirements for Basic EIS Review Staff

EIS Review Coordinator	Technically Oriented Staff	Non-Technically Oriented Staff
EIS Review Coordinator	1	1
Technical Writer	-	1
Clerical	1	1
Direct Reviewers	2	-
Associate Reviewers	2	3
	6[a]	6[a]

[a]Approximated staffings on a base work load of 150 EISs with LO ratings.

B.3.2 Additional Manpower Resource Requirements

A. Additional manpower for ER- or EU-related projects

The base staff assumed 150 LO rated EIS reports. Additional time is required to evaluate ER- and EU-rated projects. It has been found that the time requirement for an ER-associated project is approximately 12 days of technical time, while an EU-rated project takes about 16 days of technical effort. Since regions have so few EU-rated projects, the ER- and EU-rated projects have been combined as a resource estimator. To review approximately ten ER- or EU-rated projects, an additional man-year of effort must be added to the base load (again, assuming that 150 man-days per man-year of technical effort are available for EIS review.

B. Additional Manpower for Heavy Workloads

Since some regions may review more than 150 EISs per year, an additional manpower allocation must be included in the staffing algorithm. Again, assuming 150 man-days of productive EIS review effort per man-year and four man-days per EIS reviewed, one additional man-year of resource is required for every 35 EISs over 150 EISs (the base load).

C. Manpower Adjustments for EIS Related Activities

When EIS staffs are mandated with additional activities, the resource requirements of that staff should be adjusted. The following resource adjustments should be included for various activities:

1. State EIS Review. As for Federal EIS review, one man-year should be allocated for every 35 state EISs reviewed.

2. Pre-EIS Report Reviews. A trend toward pre-EIS reports submitted to EPA for review was observed in many regions. One man-year for every 35 reports must be added to EIS resources. (In the longer term, pre-EIS reports should reduce EIS review time.)

3. Environmental reports, negative declarations, ten year statements, environmental assessments. It has been observed that a region handles a variety of miscellaneous studies and reports not necessarily related to EIS projects. About three man-days of effort are devoted to such reports, allowing 50 such reports to be evaluated with one man-year of effort.

4. Training. Included as part of pre-EIS activity, some regions have begun a training program. Such a training program is directed toward submitting agencies and the public. About 1/4 man-year of technical effort has been associated with the training activity.

Given the staffing parameter as discussed, a staffing algorithm can be constructed and appears in Table 11.

B.4 Illustrative Examples

In this section the staffing algorithm is used to generate the EIS review teams "required" by Regions V, VIII, and X. Implicit in this example is the assumption that each region's review activities over the last twelve months are representative of demands placed upon their resources. The procedure is detailed in Tables 12, 13 and 14. For example, the staffing algorithm indicates that 10.6 MY is needed by Region V to adequately handle the demands placed on the EIS review staff. On the other hand, Region V is budgeted for only 9 man-years. Hence, the algorithm suggests that Region V may be slightly understaffed.

Similarly, the algorithm may be applied to each of the ten regions to determine if a region is significantly under- or over-staffed. Since the algorithm provided is only a generalized guide to regional staffing, it should be supplemented with a "subjective common sense" review of the region. Special situations or intangible parameters not accounted for in the algorithm should be factored into a regional staffing review.

Table 11. Regional EIS Review Staffing Guidelines

Base Staff	Technically Oriented Staff	Non-Technical Staff
EIS Review Coordinator	1	1
Technical Writer	-	1
Clerical	1	1
Direct Reviewers	2	1
Total Base Staff	6	6
Additional staffing for heavy work loads	1 MY for 35 EISs	
Additional staffing for EU, ER rated projects	1 MY for 10 EU or EU projects	
Additional staffing for EIS-related projects		
1. State EIS Review	1 MY for 35 state EISs	
2. Pre-EIS reports	1 MY for 35 pre-EISs	
3. Environmental reports, assessments, etc.	1 MY for 50 reports	
4. Training	.25 MY for training seminars	

Table 12. Determination of Region V EIS Review Staff Requirements

Data[a]	No.
Federal EISs reviewed	180
EU, ER Rated EISs	20
State EISs	0
Pre-EIS Reports Handled	20
Environmental Reports Handled	50
Training	0

Analysis

Parameter	Man Years	
Base Staff	1	EIS Coordinator
	2	EIS Reviewer
	1	Clerical
	2	Assoc Reviewers
Additional Work Load	1	EIS Reviewer
EU, ER Related Projects	2	EIS Reviewers
Pre-EIS Reports	0.6	EIS Reviewer
Environmental Reports	1	EIS Reviewer
Training	0	
Total Staffing Required	10.6	

[a]Data from Gary Williams, Region V EIS Coordinator

Table 13. Determination of Region VIII EIS Review Staff Requirements

Data[a]	NO.
Federal EISs reviewed	140
EU, ER Rated EISs	15
State EISs	0
Pre-EIS Reports Handled	10
Environmental Reports Handled	15
Training	0

Analysis

Parameter	Man Years	
Base Staff	1	EIS Coordinator
	2	EIS Reviewer
	1	Clerical
	2	Assoc. Reviewers
EU, ER Rated Projects	1.5	EIS Reviewers
Pre-EIS Reports	0.3	EIS Reviewer
Environmental Reports	0.3	EIS Reviewer
Training	0.0	
Total Staffing Required	8.1	

[a]Data from William Geise, Region VIII EIS Coordinator

Table 14. Determination of Region X EIS Review Staff Requirements

Data[a]	NO.
Federal EISs reviewed	150
EU, ER Rated EISs	10
State EISs	80
Pre-EIS Reports Handled	15
Environmental Reports Handled	20
Training - Seminar, Public Meetings	

Analysis

Parameter	Man Years	
Base Staff	1	EIS Coordinator
	2	EIS Reviewers
	1	Clerical
	2	Assoc. Reviewers
State EIS Reviews	2.2	EIS Reviewers
EU, ER Related Projects	1.0	EIS Reviewer
Pre-EIS Reports	0.4	EIS Reviewer
Environmental Reports	0.4	EIS Reviewer
Training	0.25	EIS Reviewer
Total Staffing Required	10.25	

[a]Data from Walt Jaspers, Region X EIS Coordinator

ACKNOWLEDGMENTS

The authors of this report gratefully acknowledge the assistance of the staff members of the Office of Federal Activities and EPA Regions IV, V, VIII, IX and X. Specifically, we would like to thank William Dickerson and Robert Bartlett of OFA and the following EIS coordinators: Frank Redmond - Region IV; Gary Williams - Region V; William Geise - Region VIII; John Wise - Region IX; Walt Jaspers - Region X.

Finally, we would like to thank Kenneth Nelson and Allen Kennedy of Argonne National Laboratory for reviewing this report and Phyllis Raschke and Marjorie Brockman for their splendid job of typing it.

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